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EXAMINER

DAS, CHAMELI

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/838,532

Applicant(s)

BABAIAN ET AL.

Examiner

C.DAS

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-- Th MAILING DATE of this communication appears on the cover sheet with th correspond nce address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1. Claims 1-23 are pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breternitz, Jr. et al (Breternitz), US 5,805, further in view of Miller (US 5,835,768) and Curreri et al (Curreri), US 6,091,896.

***As per claim 1, Breternitz discloses:***

- identifying a sequence of foreign code (Abstract, lines 1-2, col 2 lines 3-10)
- determining if said sequence of foreign code has translated binary code (col 2 lines 3-12, col 2 lines 30-35), the translated code is in binary object format is shown in (column 7 lines 40-41)
- if said determining step identifies translated binary code... to memory associated with said computer system (col 2 lines 30-35, and col 7 lines 40-41, col 6 lines 40-44)
- if said determining step does not identify the translated binary code, translating said foreign code ... memory (Abstract, lines 1-2, col 2 lines 3-14, col 6 lines 25-44).

Breternitz does not specifically disclose identifying foreign code has corresponding translated code. However, Curreri discloses identifying foreign code has

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corresponding translated code (Curreri, col 3 lines 16-23, col 14, lines 13-16). The modification would be obvious because one of the ordinary skill in the art would be motivated to map the foreign code and translated code efficiently.

Breternitz does not specifically disclose that binary code is stored in database. However, Miller discloses that translated code is stored in the database (Miller, col 8 lines 8-9). The modification would be obvious because one of the ordinary skill in the art would be motivated to store the object in the database to keep the record in an organized manner.

As per claim 2, Breternitz does not specifically disclose that saving the translated code in the database. However, Miller discloses that translated code is stored in the database (Miller, col 8 lines 8-9). The modification would be obvious because one of the ordinary skill in the art would be motivated to store the object in the database to keep the record in an organized manner.

3. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breternitz, Jr. et al (Breternitz), US 5,805, and further in view of Miller (US 5,835,768), Curreri et al (Curreri), US 6,091,896 and Official notice.

**As per claim 3**, Breternitz does not specifically disclose the hash value. However, Official notice is taken for saving hash value. The modification would be obvious because one of the ordinary skill in the art would be motivated to generate a unique identifier for the records stored in the database.

**As per claim 4**, Breternitz discloses to save the foreign code (col 6 lines 40-42).

**As per claim 5, Breternitz** discloses saving the loader information (col 6 lines 40-40), External Storage 32 and **loaded** for execution directly into the Memory 34, or stored on the Secondary Storage 30 prior to **loading** into Memory 34 and execution” inherently including saving loader information as claimed.

**As per claim 6, Breternitz** discloses the block which has translated binary code (col 2 lines 30-34). Breternitz does not specifically disclose to save the identifying value. Official notice is taken for saving identifying value. The modification would be obvious because one of the ordinary skill in the art would be motivated to identify the record properly and efficiently.

**As per claim 7, Breternitz discloses** that storages can be a disk (col 6 lines 30-40 and fig 6). Breternitz does not specifically disclose saving a disk sector value. Official notice is taken for saving a disk sector value. The modification would be obvious because one of the ordinary skill in the art would be motivated to identify the record properly and efficiently.

4. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breternitz, Jr. et al (Breternitz), US 5,805, and further in view of Miller (US 5,835,768), Curreri et al (Curreri), US 6,091,896 and Levy et al (Levy), US 6,145,121.

**Regarding claim 8, Breternitz discloses:**

- transferring a sequence of foreign code from a disk drive sector (Fig 6)  
the translated code is in the database is disclosed by Miller (Miller col 8 lines 8-10), Miller also discloses to locate the object code in the database (col 9 lines 1-4).

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Neither Breternitz nor Miller disclose the disk sector value. However Official notice s taken for the disk sector value, see the rejection of 7 above.

Neither Breternitz nor Miller disclose determination the location of the database by the index. However, Levy discloses to determine the location of the object in the database by a unique identifier (index) ( Levy, col 20-25). The modification would be obvious because one of the ordinary skill in the art want to locate the object in the database efficiently.

***For claim 9, see the rejection of claim 1 and 2.***

***Regarding claim 10, Breternitz discloses:***

- identifying the location ... said disk drive (Breternitz, col 8 lines 45-46, abstract, Fig 6 and col2 lines 30-35), for the rest of the limitations, see the rejection of claim 1 and 8 above.

***For claim 11, see the rejection of claim 8.***

5. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breternitz, Jr. et al (Breternitz), US 5,805, and further in view of Miller (US 5,835,768), Curreri et al (Curreri), US 6,091,896, Levy et al (Levy), US 6,145,121 and Lewis et al (Lewis), US 5,590,331

***Regarding claim 12, Breternitz discloses:***

- decoding the foreign code (Abstract, col 2 lines 3-10)  
- optimizing the code monitoring process ( col 1 lines 5-10, col 2 lines 5-12, col 3 lines 10-18).

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Breternitz does not specifically disclose semantic substitution for the code.

However, Lewis et al discloses semantic substitution for the code (col 7 lines 15-25, col 11, lines 50-55, col 16 lines 60-65). The modification would be obvious because one of the ordinary skill in the art want to execute the code efficiently.

***For claim 13, see the rejection of claims 2 and 6.***

***Regarding claim 14,*** Breternitz discloses binary code is stored on the second disk drive (col 6 lines 40-45), where the executable version is the binary code version and secondary storage. Breternitz does not specifically disclose that saving the translated code in the database. However, Miller discloses that translated code is stored in the database (Miller, col 8 lines 8-9). The modification would be obvious because one of the ordinary skill in the art would be motivated to store the object in the database to keep the record in an organized manner.

6. Claims 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breternitz, Jr. et al (Breternitz), US 5,805, and further in view of Miller (US 5,835,768) and Curreri et al (Curreri), US 6,091,896

***Regarding claim 15,*** Breternitz discloses a central processor (abstract), having a plurality of execution units each adapted to execute a plurality of operations in parallel (col 2 lines 25-35), a memory unit having first and second space for storing host and foreign code, host code corresponding to said foreign code (col 3 lines 23-45), a dynamic binary translation processor ... run-time (col lines 5-10, col 2 lines 5-12), optimizing said host code... host code (col 2 lines 5-15, abstract), dynamic run time

processor ... binary code (col 1 lines 5-10, col 3 lines 10-20, col 4 lines 57-67), storing host and foreign code (col 23-45).

Breternitz discloses memory. Breternitz does not specifically disclose virtual memory. Official notice is taken for storing data in virtual memory. The modification would be obvious because one of the ordinary skill in the art would be motivated to store the data in the larger and more uniform space.

Breternitz does not specifically disclose that binary code is stored in database. However, Miller discloses that translated code is stored in the database (Miller, col 8 lines 8-9). The modification would be obvious because one of the ordinary skill in the art would be motivated to store the object in the database to keep the record in an organized manner.

Breternitz does not specifically disclose identifying foreign code has corresponding translated code. However, Curreri discloses identifying foreign code has corresponding translated code (Curreri, col 3 lines 16-23, col 14, lines 13-16). The modification would be obvious because one of the ordinary skill in the art would be motivated to map the foreign code and translated code efficiently.

**Regarding claim 16, Breternitz** does not specifically disclose determining whether a selected portion of said foreign code corresponds to a portion of said host code. However, Curreri discloses determining whether a selected portion of said foreign code corresponds to a portion of said host code (Curreri, col 3 lines 16-23, col 14, lines 13-16). The modification would be obvious because one of the ordinary skill in the art would be motivated to map the foreign code and translated code efficiently.



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**Regarding claim 17**, (Breternitz, col 1 lines 5-10, col 2 lines 5-15, col 3 lines 10-15).

**For claim 18, see the rejection of claim 8.**

**For claims 19-23**, see the rejection of claims see the rejections of claims 3, 6, 7, 8 and 14.

7. The prior art made or record and not relied upon is considered pertinent to applicant's disclosure.

TITLE: Method and apparatus for maintaining translated routine stack in a binary translation environment, US 6535903 B2

TITLE: Emulation system that uses dynamic binary translation and permits the safe speculation of trapping operations, US 6631514 B1

TITLE: Compilers using a universal intermediate language, US 4667290 A

TITLE: Non-linear database set searching apparatus and method, US 6070160 A

TITLE: Utilizing encoded vector indexes for statistics in database processing, US 6405187 B1

TITLE: Method and apparatus for operating a data processor to execute software written using a foreign instruction set, US 6044220 A

TITLE: Safe general purpose virtual machine computing system, US 6151618 A

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 703-305-1339.

The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 3:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be reached at 703-305-4552. The fax number for this group is (703)872-9306.

An inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-9600.



Chameli C. Das

Primary Patent Examiner

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